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The Early History of Medicine

An Exhibition of Books Selected from the Jason A. Hannah Collection in the History of Medical and Related Sciences

March 1974

ARS LONGA VITA BREVIS

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"The chief good is wisdom: the chief evil is the suffering of the body. Seeing therefore that we are made up of two things, namely of soul and body, of which the first is the better and the inferior is the body, wisdom belongs to the better part and the chief evil belongs to the worst part and is the worst. The best thing in the soul is wisdom, and even so the worst thing in the body is pain."

Leonardo da Vinci

Medicine, of all the sciences, is the one with the most immediate and direct effect on the individual human being. The alleviation of pain and the remedying of bodily ills has been a primary concern of mankind since the beginning of civilizations. The history of medicine is the record of a constant striving to clarify and improve a science and an art, the practitioners of which have traditionally occupied a special place of distinction in the community. The Jason A. Hannah Collection in the History of Medical and Related Sciences contains the published records of the researches and reflections of many persons who have contributed to the development of medical practice from ancient to modern times. As such, it is a collection of books essential to any understanding of not only the history of medicine but also many other facets of human existence.

The Hannah Collection consists of books purchased by Associated Medical Services Incorporated, of which Dr. Hannah is President and Managing Director, and presented to the Thomas Fisher Rare Book Library in recognition of Dr. Hannah's pioneering contribution to prepaid medical care in Canada and his interest in the teaching of history of medicine. Most of the books were formerly in the collections of the Medical Society of London, which, in 1966, decided to place the most valuable books and manuscripts from their collections in the famous Wellcome Library. Books which were duplicates or were not complementary to the remaining collections were sold and these make up the bulk of the Hannah Collection.

This exhibition is composed of a selection of books from the Hannah Collection, all of them important contributions to the history of medicine. It attempts to indicate both the range and depth of this valuable collection which at present contains about three thousand volumes.

Case 1

Hippocrates. 460–375 B.C.
Coi Medicorum Omnium. Romae, 1525.

Hippocrates, popularly known as the "Father of Medicine", practised during the age of Pericles. Even though many of the writings attributed to him were actually composed by other members of the Hippocratic School he gave to Greek medicine its scientific spirit and its ethical ideals. The "Hippocratic Oath" still remains the classic expression of the duties, ethics and moral standards of the medical profession. His position in the history of medicine is summed up by Garrison: "All that a man of genius could do for internal medicine, with no other instrument of precision than his own open mind and keen senses, he accomplished".

This, the first complete edition of Hippocrates to be published, contains eighty books. The "Hippocratic corpus" varies between fifty-nine and one hundred works all of which are based on empirical data gathered from bedside experience and clinical teaching. The descriptions of fevers, phthisis, puerperal convulsions and epilepsy are classics. The treatise on surgery includes treatment of dislocations and fractures, trephining the skull, descriptions of surgical instruments, rules on public health and a section on the brain.

The most famous section is that called *The Aphorisms*, a collection of brief clinical observations. Such common proverbs as "art is long, life is short" and "desperate diseases require desperate remedies" are examples of Hippocratic aphorisms. *The Aphorisms* was reprinted many times, often in pocket-size editions.

Galen. ca. 130–201 A.D.
Methodus Medendi, Thoma Linacro Anglo Interprete. Parisiis, 1526.

Galen, a Greek, was the most voluminous of all ancient writers on medicine and a vast corpus of his work has survived. He established a system of pathology which combined the humoral ideas of Hippocrates with the Pythagorean theory of the four elements and it became the final authority for all medical questions. For nearly fifteen hundred years, until the time of Vesalius, Galen was the "Bible of medicine" and practically no experimental advances were made during that time.

Galen was himself an acute observer and some of his treatises in physiology and anatomy, particularly concerning the brain, are original contributions to medical science. The works were written in Greek but were early translated into Arabic and then reached western Europe through Hebrew and Latin. The first Greek edition was published by Aldus in Venice in 1525.

This edition of Galen's work on therapeutics was edited by the English physician and humanistic scholar Thomas Linacre (1460–1524). His translations were faithful and accurate and achieved a wide circulation. This edition contains Linacre's letter of dedication to Henry VIII whose personal physician he was.

Albucasis. 936–1013.
Methodus Medendi Certa. Basileae, 1541.

Albucasis, a native of Cordova, compiled the leading textbook on surgery during the Middle Ages. The treatise was called the "Altasrif"

or "Collection" and contained many illustrations of surgical and dental instruments. It consisted of three books: the first dealing with the actual cautery, a feature of Arabic surgery; the second containing descriptions of lithotomy, lithotrity, amputations and the treatment of wounds; and the third dealing with fractures and dislocations. Albucasis was apparently the first to write on the treatment of deformities of the mouth and dental arches.

Aulus Cornelius Celsus. 25 B.C.–50 A.D.
De Re Medicina. Lugduni, 1566.

Written about 30 A.D., the *De Re Medicina* is the oldest surviving medical work after the Hippocratic writings. Celsus, an aristocratic gentleman of the Cornelius family composed his history of medicine within the same literary tradition as Cato and Varro and later became known as "Cicero Medicorum" because of the purity of his Latin style.

Of the seventy-two medical authors cited by Celsus only the work of Hippocrates himself has survived in any substantial form. *De Re Medicina* consists of eight books, four of which deal with diseases which may be treated by diet and physical regimen and four which require drugs and surgery in their treatment. The third book contains the first adumbration of heart disease and in the seventh book Celsus gives one of the first accounts of the use of a ligature and a classic description of latoral lithotomy.

Case 2

Andreas Vesalius. 1514–1564.
De Humani Corporis Fabrica. Venetiis, 1568.

Andreas Vesalius.
Opera Omnia Anatomica & Chirurgica. Cura Hermanni Boerhaave & Bernhardi Siegfried Albini. Lugduni Batavorum, 1725. 2 vols.

Andreas Vesalius.
De Humani Corporis Fabrica. Lugduni, 1552. 2 vols.

Vesalius, the most commanding figure in European medicine after Galen and before Harvey, in one giant step brought the study of anatomy into the light of modern science. It is significant that his *De Humani Corporis Fabrica* was first published the same year (1543) as the *De Revolutionibus Coelestium* of Copernicus thus linking the two most important works of the scientific Renaissance.

The *Fabrica* was a complete anatomical and physiological study of every part of the human body, based on first hand examination through dissection and his experience as the public prosector of the medical school at Padua. He was only twenty-nine at the time of its publication and considering the difficulties he had in obtaining anatomical specimens his is a feat, as Osler says, "to which the literary history of the profession offers no parallel".

The 1568 edition of the *Fabrica* is unusual, and rare, because it was

printed without a licence in Venice. The text and marginal notes are taken from the Basle revised edition of 1555 and the woodcut plates, by John Criegher, are slightly reduced copies of those in the 1555 edition. The woodcut capital initials were especially cut for this edition.

The two volume 1725 edition of the *Works* of Vesalius was issued to celebrate the two hundredth anniversary of his birth. It was edited by Boerhaave and Albinus, two of the most prominent medical personages of the time. The plates were beautifully engraved on copper by J. Wandelaar, the portrait of Vesalius being particularly striking.

In 1552 Johannes Tornaesius issued in Lyon a two volume "students edition" of the *Fabrica*. It is in a small format, without any plates, but contains the complete text.

Thomas Gemini. fl. 1540–1560.
Compendiosa totius Anatomie Delineatio. London, 1559.

Gemini, an obscure engraver and printer, published the first Latin edition of this work in 1545, a mere two years after the appearance of the *Fabrica*. It was, in effect, an abridgement of Vesalius' masterpiece, the copper-plate engravings being copies of the earlier woodcuts. The engravings in that edition are among the earliest known in England. In 1553 an English translation by Nicholas Udall appeared with a dedication to Edward VI (the first edition had been dedicated to Henry VIII). The 1559 edition (on display), revised by Richard Eden, was dedicated to Elizabeth I and the portrait of her on the title page is the first to have been published after her accession to the throne.

There is a striking difference between the depiction of an anatomical model by the woodcut process and the same subject engraved on copper-plate.

Case 3

Gabriele Falloppio. 1523–1562.
Opera Omnia. Francofurti, 1600.

Fallopius has been considered the most illustrious of sixteenth century Italian anatomists. He was a student of Vesalius, held a chair of anatomy at Ferrara and at Pisa, and finally came to Padua, the principal seat of medical learning in sixteenth century Europe. He died at the age of thirty-nine, leaving incomplete a textbook of anatomy which he was preparing. Fallopius did not publish as much as Vesalius, nor did he attach great importance to illustrations, but he was nevertheless a major anatomist, attacking the teachings of Galen and correcting his master.

Because of his accurate anatomical descriptions Fallopius was falsely accused of vivisecting human beings; for at this time superstition and ignorance prevented proper anatomical investigation. The accusations were not, however, founded on fact, for in common with other surgeons Fallopius gained his knowledge during the actual course of surgical operations, a procedure known as "anatomia fortuita."

Fallopius' fame is perpetuated by the "Fallopian tubes" to which he

gave his name, but his discovery and description of the ovaries is but one in a long list of his achievements and contributions to medical and anatomical knowledge. Fallopius was the first to describe the *chorda tympani*, the semicircular canal of the ear, and the circular folds of the small intestine called the valves of Kerckring. He corrected Vesalius concerning the course of the cerebral arteries, named the vagina and placenta, and described the clitoris and the *arteria profunda* of the penis.

Girolamo Fabrizio. 1536–1619.
Opera Anatomica. Padua, 1625.

Fabricius was born at Aquapendente, between Rome and Siena, and became the pupil of Fallopius at Padua about 1550. He later became a professor of surgery and influenced his most famous pupil William Harvey by interesting him in embryology and physiology. Fabricius described the valves of the veins in his *De Venarum Ostiolis* (1603), and though he first noted the valves while disecting in 1574, he did not discover them, and in fact did not recognize their function. *De Venarum* is usually found bound with his other works and with a title page dated 1625 (exhibited here). Fabricius also wrote two significant works on embryology: *De Formato Foetu* (1600) and *De Formatione Ovi et Pulli* (1621) in which his illustrations formed a considerable advance on previous knowledge, and where was recorded for the first time the dissection of several embryos.

Ambroise Paré. 1510–1590.
Chirurgical Works. London, 1649.

Paré, initially a barber's apprentice and without formal education, became the greatest surgeon of his time. The story of his revolutionary treatment of gun-shot wounds with a mild lotion rather than the traditional cauterization with boiling oil and treacle is one of the most famous in medical history. He invented many surgical instruments, re-introduced the ligature and introduced massage as an effective remedy. He was the first to suggest syphilis as a cause of aneurysm. Artificial limbs (shown in the volume on display) were first introduced by this truly Renaissance man and his treatise on medical jurisprudence was the first work of consequence on the subject.

Paré's works were written, and published, in French. The first English translation, by Thomas Johnson, appeared in 1634 and was followed by this edition in 1649.

Thomas Bartholin. 1616–1680.
Anatomia. Hagae, Cornitis, 1655.

Thomas Bartholin.
Acta Medica & Philosophica Hafniensia. Hafniae, 1673–80.

Thomas Bartholin was the famous son of a famous father, both of whom made important contributions to Danish medicine during the seventeenth century. Thomas revised his father's *Anatomicae Institutiones*

and published it at Leyden in 1641. To this revision Bartholin added the results of Harvey's discoveries, and subsequently the work went through many editions, and was translated into French and German.

Thomas Bartholin was a man of wide interests: he was professor of mathematics and of medicine at Copenhagen; wrote books on antiquarian and religious subjects (including a study of the diseases mentioned in the Bible); wrote a history of obstetrics and investigated the concept of local anaesthesia – snow used as an analgesic. Bartholin discovered the thoracic duct, described the intestinal lymphatics and was the first to appreciate the significance of the lymphatic system as a whole. He also established one of the first medical periodicals, the *Acta Medica & Philosophica Hafniensia* (1673–80), an important publication which not only reflected his personal interest, but was wide in its scientific scope: it ceased publication when he died.

Case 4

William Harvey. 1578–1657.
Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus. Rotterdam, 1660.

William Harvey
De Generatione Animalium. Amsterdam, 1662.

William Harvey, the most important medical genius after Vesalius, is remembered and honoured as being the first to demonstrate clearly and concisely the circulation of the blood. Harvey was the only experimental physiologist of his time and the first to follow up Galen's physiological theories which had retained absolute authority until the seventeenth century.

De Motu Cordis, a pamphlet of 72 pages, was first published in Frankfurt in 1628, and its immediate effect was to rectify the fourteen centuries of misinformed speculation spawned by Galen's doctrine that the blood passes from the right to the left ventricle through invisible pores in the interventricular septum. Galen thought that the venous blood and the arterial blood ebbed and flowed back and forth, but had no connection with each other except through his imagined "invisible pores."

Harvey made a special and careful study of all the theories of blood circulation, and by a number of experiments, including vivisection, ligation, and perfussion, he presented an inductive proof that the heart acts as a pump and that the blood moves in a continuous cycle in one direction. Harvey demonstrated that the actual amount and velocity of the blood made it physically impossible for it to do otherwise than return to the heart by the venous route. He showed that the blood passes through the lungs, returns to the left side of the heart, passes through the general circulation and returns to the right side of the heart. Harvey was thus the first to apply a purely mechanical and mathematical explanation to the vital processes of the body. In spite of the fact

that he did not have a microscope, Harvey suggested the existence of capillaries which connect the smallest arteries with the smallest veins: it was left to Malpighi to discover and prove their existence in 1661.

Harvey's work and the conclusions he reached about the circulation of the blood, were accepted by most medical men in his lifetime, and *De Motu Cordis* went through many editions. The first edition, printed in Frankfurt by William Fitzer was followed by other printings, noteworthy among them being the Padua edition of 1689, the Rotterdam of 1660, the London of 1660, and the very rare Bologna of 1697.

In addition to his experiments and discoveries related to the circulation of the blood, Harvey was also extremely interested in embryology. *De Generatione Animalium,* was published in 1651, and three other editions, one by Elzevir, appeared in Amsterdam in the same year. *De Generatione* was also published in Amsterdam in 1662 (exhibited here), Padua in 1666, and The Hague in 1680. Once again, Harvey was handicapped by the lack of a microscope, and it was left to Malpighi to elaborate Harvey's theories with direct observation and discovery. Nevertheless, Harvey's contributions to embryology are significant: he maintained the theory that the organism does not exist encased or pre-formed in the ovum, but is evolved from it, and he also contradicted the ancient concept of spontaneous generation by insisting that life is generated out of eggs rather than out of corruption or putrefaction.

Richard Lower. 1631–91.
Tractatus de Corde. Londini, 1669.

Lower, one of the foremost physicians and physiologists of his time, followed Harvey with original contributions relating to the heart and circulation. He was one of the first experimenters to engage in direct transfusion of blood from one animal into the veins of another, an operation which he performed on two dogs at Oxford in February of 1665 in the presence of Boyle and other members of the Royal Society. In 1667 Lower obtained the opportunity of performing the experiment on a human and the subject, an eccentric scholar named Arthur Coga, professed himself greatly benefited thereby. Lower also performed the anatomical researches for Dr. Willis' *De Cerebro* and is thus credited with distinguishing the cranial nerves.

Marcello Malpighi. 1628–1694.
De Formatione Pulli in Ovi. London, 1673.

Malpighi, "the founder of histology", was a student of medicine and philosophy at Bologna where he later became Professor of Medicine. He discovered the structure of the lung, and his descriptions of this discovery along with his observations of the capillaries were published as *De pulmonibus observationes anatomicae* (Bologna 1661). Malpighi was a great microscopist, spurning speculation in favor of detailed descriptions of what he actually saw through his microscope. He saw and described the capillary anastomosis between the arteries and the veins, and thus added considerably to the observations of Harvey. Malpighi's *Dissertatio epistolica de Bombyce* (London 1669) is the

first monograph on an invertebrate and describes the dissection of the silkworm. Since the silkworm was then believed to have no internal organs, Malpighi's original and painstaking research revealed for the first time the intricate structure of that insect and had considerable impact on future anatomical investigation.

Malpighi was also a great embryologist, and presented the first microscopical description of the chick embryo in *De ovo incubati observationes* (London 1673), and in *De formatione pulli in ovo* (London 1673). The study of embryology was thus placed on a sound scientific basis, anticipating general approaches to embryological research. He did important original work on the liver, spleen, and kidneys, and his name is perpetuated in the "Malpighian bodies" the "Malpighian layer" of the skin, and "Malpighi (spleenic) corpuscles."

This copy of *De Formatione Pulli* is an interesting association item, bearing inscriptions noting that in 1848 it was given to Allan Thomson by Prof. Syme, and that in 1886 Thomson (fils) presented the book to Sir Joseph Lister. James Syme (1799–1870) professor of clinical surgery at Edinburgh was the first to amputate the hip joint and was an early enthusiast and exponent of anesthesia and antiseptic surgery. Sir Joseph Lister (1827–1912), Syme's pupil and son-in-law, revolutionized surgical operations through his popularization of antiseptic methods.

Rene Descartes. 1596–1650.
De Homine Figuris. Lugduni Batavorum, 1664.

Usually regarded as the first European textbook on physiology, Descartes' treatise utilizes the discoveries of Harvey even though Descartes himself remained, theoretically, a Galenist. He believed that the human body was a material machine, directed by a rational soul which was located in the pineal gland. Thus the work is, in many ways, a physiological appendix to the famous *Discourse on Method.*

This volume is the first complete Latin edition published two years after the first edition in French. It is opened at an example of a "dissected plate", each flap of which is printed on both sides: this is an early use of movable parts to show anatomical structures in medical book illustration.

Case 5

Govert Bidloo. 1649–1713.
Anatomia Humani Corporis. Amstelodami, 1685.

Johann Remmelin. 1583–16--?
Catoptrum Microcosmicum. Ulma Suenorum, 1639.

Woodcut anatomical illustration had reached the height of perfection with the masterpiece of Vesalius. The majestic posed skeletons and flayed figures in rural and idyllic landscapes gave way to the precision and detail of seventeenth century copper-plate engraving. The magnificent folio volumes of such masters as Bidloo and Remmelin displayed the human body as an artistic as well as an anatomical form.

Bidloo's *Anatomia* created such an impression that the plates were plagiarized by William Cowper for his *Anatomy of Human Bodies* (1698). Although accused by Bidloo in *Gulielmus Cowper Criminis Literarii Citates* (1700) Cowper refused to recognize the Dutch anatomist's claim and the incident provides only one example of the "borrowing" that was common between anatomists. The engravings, among the finest examples of this art during the Baroque period, have been attributed to G. de Lairesse and (by Philip Hofer) to Pieter van Gunst.

Remmelin's *Catoptrum Microcosmicum* was first published in 1613 with only the initials "J.R." appearing on the title-page. It was one of the first anatomic atlases to use superimposed plates although the idea had been suggested by Vesalius. The use of this technique allows the anatomist to illustrate relationships between different parts of the body and reproduce pictorally the process of dissection. For obvious reasons this kind of illustration does not often survive in its original condition.

Case 6

Anthony van Leeuwenhoek. 1632–1723.
Arcana Naturae. Delphis Batavorum, 1695–1719.

Often described as the first bacteriologist, Leeuwenhoek's achievement is the more remarkable because, without any scientific training, he became a most accomplished microscopist. He ground his own lenses and during his lifetime used two hundred and forty-seven microscopes: when he died in 1723, aged ninety, Leeuwenhoek bequeathed twenty-six to the Royal Society. Leeuwenhoek's discoveries were communicated to the Royal Society in a series of more than two hundred letters, sent during a period of fifty years: in addition, he also contributed notes to the French Académie des Sciences.

As an original contributor to microscopy, Leeuwenhoek's discoveries encompassed both the anatomy of man and the higher and lower form of animal and plant life. His accurate account of the red blood corpuscles and his studies of the movement of blood in the capillaries, extended the observations of Malpighi and completed the work of Harvey. He also studied the fibres of the muscles, the optic nerves, the skin and teeth, and was the first to provide a recognizable description of bacteria. Leeuwenhoek found micro-organisms on the teeth, but did not realize the importance of his discovery of various types of bacteria and their connection with morbid infection. It remained for Pasteur to rediscover the relationship.

Leeuwenhoek was also the first to fully describe spermatozoa, and his investigation of the generative processes in various insects contradicted the theory of spontaneous generation, proving that organisms are the product of pre-existing parents of their own species. He also introduced staining in histology, and in 1719 used saffron to stain muscle fibres and thus make them more visible. His work can be con-

sidered to be the true beginning of protozoology, bacteriology and microbiology.

Leeuwenhoek's observations were first printed in the *Philosophical Transactions* of the Royal Society, and many collections of his work were subsequently published. *Arcana Naturae* or "Secrets of Nature Discovered", a collection of his most important writings, was published in four volumes between 1695 and 1719.

Giovanni Battista Morgagni. 1682–1771.
De Sedibus, et Causis Morborum per Anatomen Indagatis Libri Quinque. Venetiis, 1761.

Morgagni is quite properly considered to be the founder of pathological anatomy, and according to Rudolph Virchow, "with him begins modern medicine." *De Sedibus*, first published in 1761 is Morgagni's greatest work and a tribute to his diligence in developing the procedure of correlating post mortem findings with clinical records. Morgagni was dedicated to finding the causes of disease, and introduced the anatomical concept to medical practice by tracing disease from its symptoms to the organ where the symptoms arose.

De Sedibus is based on six hundred and forty post-mortems and reports the significant findings of each. Morgagni described many new diseases, and *De Sedibus* includes classic descriptions of the heart, blood vessels, lungs and throat. The volume includes a case of heart-block (Stokes Adams disease), descriptions of the classical features of pneumonia, gummata (syphilitic tumours in the brain), and lesions in angina pectoris, along with many others.

Such was Morgagni's care and respect for accurate anatomical demonstration, that *De Sedibus* was not published until he was in his seventy-ninth year. The impact of the work and its importance was immediately recognized, and it was soon translated into French, German, and Italian. An English version by Benjamin Alexander was published in London in 1769.

John Hunter. 1728–1793.
The Natural History of the Human Teeth. London, 1778.

Pierre Fouchard. 1678–1761.
Le Chirurgien Dentiste. Paris, 1728. 2 vols.

John Hunter, the founder of experimental and surgical pathology, was the younger brother of William Hunter, the anatomist and surgeon. He served as an army surgeon and gathered extensive experience of surgery and particularly of gunshot wounds, the latter resulting in *A Treatise on the Blood, Inflammation and Gunshot Wounds ...* 1794. His other works include *On Venereal Disease* (1786) and *Observations on Certain Parts of the Animal Oeconomy* (1786).

Hunter was a pioneer in comparative physiology and experimental morphology, and though his treatise on venereal disease enjoyed wide popularity, it was inaccurate because of a faulty experiment: Hunter appears to have injected himself with gonorrhea along with syphilis,

and the confusion of symptoms contributed to the inaccuracy.

It is interesting to note that Hunter printed and sold all of his books from his own home, the only exception being *The Natural History of the Human Teeth* which was sold to the booksellers in the normal way. Hunter maintained a complete printing office in his home, and at one time employed three printers.

John Hunter's first book *The Natural History of the Human Teeth* (1771) was followed by a second part, *A Practical Treatise on the Diseases of the Teeth* (1778), both parts being issued as a second edition in 1778 (exhibited here). Hunter was the first to apply the scientific method to the study of teeth, and the first to suggest the complete removal of the pulp in filling them. He introduced the classes Cuspids, Bicuspids, Molars, and Incisors, enlarged upon dental malocclusion, and devised instruments for correcting the condition.

Hunter's dental work was preceded by that of Pierre Fouchard (1678–1761), whose *Le Chirurgien Dentiste* is the first scientific work on the subject, and the beginning of modern dentistry. Fauchard describes operative dentistry procedures in the filling of teeth, and in prosthesis (artificial dentures), bridge work, etc., and was the first to describe the use of metal bands for the correction of irregularities. Fauchard not only illustrated the instruments used in his practice, but revealed the antiseptic methods he followed in filling teeth long before the germ theory of infection gained common acceptance.

Hermann Boerhaave. 1668–1738.

Aphorismi de Cognoscendis et Curandis Morbis. Lugduni *Batavorum*, 1728.

Boerhaave is now best remembered as a chemist (his *Elementa Chemiae* was published in 1732). In the eighteenth century, however, he was known as the "Batavian Hippocrates" with a wide and influential reputation as the greatest teacher of his time. Indeed it is through the testimony of his pupils, especially Albrecht von Haller, that his fame as a leading physician is known.

The *Aphorismi*, first published in 1709, demonstrated Boerhaave's medical position as the founder of what is known as the "Eclectic School". Thus he recognized the importance to medicine of physics and chemistry while retaining the basic disciplines of anatomy and physiology. As a true "eclectic" he refused to systematize and carried forward his work through his healing, his clinical instruction and the sheer force of his magnetic personality.

The copy of the *Aphorisms* on display has been interleaved and annotated extensively, apparently by R. Thomlinson, a student at Trinity College Cambridge in 1740.

Albrecht von Haller. 1708–1777.

Elementa Physiologiae Corporis Humani. Lausannae, 1757–66.

Haller, the greatest of the school called the "Systematists", was a notable physiologist, anatomist, botanist and poet. He also founded

medical bibliography. He demonstrated in a laboratory Glisson's hypothesis of the irritability of muscle tissue and gave an accurate account of the mechanics of respiration. The *Elementa Physiologiae* is the first great modern treatise on physiology. Altogether Haller is said to have written some thirteen hundred scientific papers.

Case 7

William Smellie. 1697–1763.
A Set of Anatomical Tables, with Explanations, and an Abridgement, of the Practice of Midwifery. London, 1754.

Smellie, described by Mrs. Nickell, the Haymarket midwife as "a great horse godmother of a he-midwife", was one of the most successful obstetrical practitioners and writers of the eighteenth century. He began to teach midwifery at his London house in 1741 using a model constructed of real bones covered with leather. In his *Treatise on the Theory and Practice of Midwifery*, which this volume of plates was designed to accompany, Smellie described more accurately than any previous writer the mechanism of parturition and stressed, for the first time, the importance of exact measurement of the pelvis. Among the obstetrical instruments he introduced were the steel-lock, the curved and the double forceps.

The drawings for the *Anatomical Tables* were made by Pieter Camper, a great Dutch comparative anatomist, and I.W. Rymsdik, who later produced the famous drawings for William Hunter's *Gravid Uterus*.

John Burton. 1710–1771.
An Essay Towards a Complete New System of Midwifery. London, 1751.

"Sir, replied Dr. Slop, it would astonish you to know what improvements we have made of late years in all branches of obstetrical knowledge, but particularly in that one single point of the safe and expeditious extraction of the foetus" (Tristram Shandy)

Burton, a physician and antiquary from York and the model for Dr. Slop, was, in fact, a capable and learned obstetrician and Sterne's objections to him seem to have been mainly political. Tristram Shandy did not benefit from the "improvements" in obstetrical knowledge but then the difficult course of his life had been presaged and largely determined by an earlier incident in the novel.

John Gerard
Herball or Generall Historie of Plants. London, 1597.

Jacques Philippe Cornuti
Canadensium Plantarum Historia. Paris, 1635.

The relationship between early works on plants and medicine was very close. Odysseus was offered the "noble plant," moly, by Hermes to overcome the spells of Circe, and up to modern times there are many

literary references to the gathering of herbs for medical purposes.

The most famous English herbal is that of John Gerard, largely based on an unfinished work by Dr. Robert Priest who had been commissioned to translate Dodoens' *Stirpium Historiae*. Gerard added English place names and local remedies for various illnesses and the work became very popular. Gerard was a barber-surgeon and no scholar and the many errors of translation were not corrected until the work was re-edited by Thomas Johnson in 1633.

Cornuti, a French botanist, produced the first Canadian flora in 1635. It was a pioneer contribution to plant ecology and described about thirty Northeast-American species of plants for the first time. Although not as obviously medical in intention as the works of Gerard and the other herbalists it does describe some of the properties of the plants in terms of their use as remedies.

Case 8

Certain Necessary Directions, As Well for the Cure of the Plague, As for Preventing the Infection. London, 1665.

In medicine the term "plague" traditionally was given to any epidemic disease which caused great mortality. Over a period of time it came to represent the infectious fever known as Bubonic, Levantine, or Oriental Plague. Its first historical notice is contained in a fragment of the writings of Rufus of Ephesus, a physician of the time of Trajan. In the fourteenth century the Black Death, as it was then known, killed approximately one-quarter of the earth's population. In 1664–65 the Great Plague of London broke out and, according to the bills of mortality, sixty-eight thousand persons died. Numerous descriptions of the London Plague were published, the most reliable being that of Hodges. Defoe's fiction-as-fact account, *A Journal of the Plague Year*, remains the most popular history of the event.

This pamphlet was hurriedly put together by the College of Physicians of the City of London and published May 25th, 1665 "by the Kings Majesties special command." There is no evidence that the "cures" had any effect at all and the plague disappeared of its own accord with the coming of winter.

Richard Mead. 1673–1754.

A Short Discourse Concerning Pestilential Contagion. London, 1720.

In 1719 a serious plague epidemic broke out in Marseilles, occasioning considerable alarm in London. Mead was asked by the Lords Justices to draw up a statement concerning preventive measures and this pamphlet was the result of that request. Seven editions were called for during the first year and due to its calm lucidity *A Short Discourse* was effectual in allaying public concern. Mead afterwards enlarged the tract into a book which prophesied the present English public health system.

Dr. Mead's life was one of unusual felicity and success. He was the most renowned physician of his time and numbered amongst his

patients Queen Anne, George I, George II, Sir Robert Walpole, Sir Isaac Newton and Bishop Burnet, the last two of which he attended on their death beds. He was intimate with the leading Augustan writers (Pope drank asses' milk on his orders) and was the closest friend of Dr. Richard Bentley. Mead was a collector of books, manuscripts, statuary, drawings, coins and gems and an enthusiastic supporter of numerous scientific, artistic and antiquarian projects. Dr. Johnson, with whom he was intimate, observed, truly, that "Dr. Mead lived more in the broad sunshine of life than almost any man."

Thomas Cogan. 1545?–1607.
The Haven of Health. London, 1612.

In 1574 Cogan became head-master of Manchester Grammar School and began to practice medicine. *The Haven of Health,* noted for its sensible suggestions for preserving health, was first published in 1584. In his "Short Treatise of the Plague" Cogan, after counselling "recourse unto God by prayer" suggests that the inhabitants of an area visited by plague "fly quickly from the place infected: abide farre off, and returne not soone againe".

Nathaniel Hodges. 1629–1688.
Λοιμολογια sive Pestis nuperae apud Populum Londinensem. Londini, 1672.

Nathaniel Hodges received his M.D. from Christ Church Oxford in 1659 and practised in Walbrook, London. When the Plague began to infect the residents of London, Hodges, unlike many of his brethren, chose to remain behind not only to treat those afflicted, but to take the opportunity to observe the symptoms and progress of the disease. Consequently, he published the best medical record of the Plague, but was also rewarded for his services; the authorities of the City of London granted him a stipend as their authorized physician.

Hodges tried all the accepted preventatives and remedies for Plague and found such things as unicorn's horn and dried toads to be useless. Perhaps as a result of his experiment with such folk remedies, he published *Vindiciae Medicinae et Mediocorum, an Apology for the Profession and Proffessors of Physics* (1666), an attack on quacks who prey on the gullible. Hodges' own procedures include the burning of disinfectant on hot coals to counteract the infectious atmosphere in the houses he visited, and an avoidance of overexertion on his own part. He records that he ate extremely well, and drank copious quantities of wine; twice when he felt as if the plague had infected him, increased draughts of sack made him feel better within hours.

Hodges recognized the merit of hartshorn (ammonium carbonate or sal volatile) as a cardiac stimulant, and described pericarditis (inflammation of the membranous sac enclosing the heart) in a case of Plague.

Nathaniel Hodges' book was recognized as a significant contribution to medical knowledge, and he was elected a Fellow to the College of Physicians; delivered the Harveian oration in 1683, and was generally

respected. Nevertheless, his practice declined and he eventually died in debtors' prison.

Theophilus Lobb. 1678–1763.

Letters relating to the Plague and other Contagious Distempers. London, 1745.

Theophilus Lobb was educated for the ministry and held a succession of non-conformist parishes. His first medical instruction was received during one of these ministries, and he eventually began to practice in Shaftesbury, Dorset, in 1706. By 1722 he was created M.D. by the University of Glasgow, and became a member of the Royal Society; he settled in London in 1732 and by 1736 he was practicing medicine exclusively.

Lobb experimented with many medical devices and pharmaceutical remedies, and in 1762 a patent was granted to him "for a tincture to preserve the blood from dizziness, and a saline scorbutic acrimony," the profits from which he bequeathed to his niece.

Lobb wrote on both religious and medical subjects, the latter being of relatively greater importance. *A Treatise of the Small-pox* appeared in two parts in 1731, and his investigation of pharmaceutical remedies resulted in *A Treatise on Dissolvents of the Stone, and on Curing the Stone and Gout by Aliment* (1739).

Letters Relating to the Plague ... (1745) is an interesting volume insofar as it shows contemporary approaches to the treatment of contagious diseases. Lobb's "Nasal Machine" and its medicated "Spunge" is but one method suggested for avoiding infection.

Sir Kenelm Digby. 1603–1665.

A Late Dicourse Made in a Solemne Assembly of Nobles and Learned Men at Montpellier in France ... Touching the Cure of Wounds by the Powder of Sympathy; With Instructions How to Make the Said Powder ... Rendred faithfully out of French into English by R. White. London, 1568.

Testimony of the Duke of Buckingham asserts that his secretary was cured of a gangrenous wound by simply soaking a bloody bandage from the wound in Digby's magical solution. The "sympathetic powder" consisted of green vitriol, dissolved in water, and recrystallized in the sun. The rays of the sun supposedly extracted the spirits of the blood and the vitriol while the heat of the wound caused the healing principle thus produced to be attracted to it through currents of air.

Sir Kenelm Digby, naval commander and diplomatist, dabbled in the sciences, particularly those pertaining to the occult. His scientific reputation was, however, considered important enough for him to be elected to the first council of the Royal Society and he enjoyed the acquaintance of the most prominent scientists of his time. Digby claimed to have learned of the "sympathetic powder" from a Carmelite who had travelled in the East. It has been suggested that his cure was indeed efficacious as the directions for its use included keeping the wound clean and cool and paying strict attention to diet. The absence of the usual

remedies may well have contributed to the success of the "powder of sympathy" as one translation of the College of Physicians' motto *Ars longa vita brevis* at this time could have been "Practice is long, so life is short."

Thomas Vicary. c1490–1561.

The Englishman's Treasure: With the True Anatomie of Mans Body. London, 1641.

Thomas Vicary is credited with producing the first English vernacular work on anatomy: *A Treasure for Englishman Containing the Anatomy of Mans Body* (London, 1548). No copy of this work survives, but the evidence for its existence is derived from a mention by John Halle in his *Anatomy or Dissection of the Body of Man* (1565). An edition of the *Englishman's Treasure* published in 1577, of which only two copies survive, has been shown to derive from a fourteenth century manuscript based upon the *Anatomy* of Lafranc, Guy de Chauliac and Henry de Mandeville. *The Englishman's Treasure* was printed many times with alterations and additions between 1586 and 1651, an edition of 1641 being exhibited here.

Vicary was appointed Surgeon to King Henry VIII in 1528 and reputedly "treated" the king's legs. He was also first Master of the Barber-Surgeon Company chartered by Henry in 1540. Vicary became resident surgical governor at St. Bartholomew's Hospital, where he was given administrative control of all the officers in 1554. His primary contribution to medicine was in raising the status of the surgeons' craft; an achievement which was made easier through his influence with Henry VIII.

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